

REMARKS

Applicants respectfully request reconsideration of this application, and reconsideration of the Office Action dated June 30, 2005. Upon entry of this Amendment, claims 3-7 will remain pending in their original form in this application. Previous claims 1 and 2 are canceled.

* * * * *

Claims 1 and 2 are rejected under 35 U.S.C. § 103(a) as purportedly obvious based on Ozawa (U.S. Pat. Pub. No. 2002/0018672) in view of Suzuki (U.S. Pat. No. 4,334,772).

Claims 1 and 2 are rejected under 35 U.S.C. § 103(a) as purportedly obvious based on Ozawa in view of Yamada (U.S. Pat. Pub. No. 2003/0202825), and further in view of Suzuki.

Claims 1 and 2 are canceled by this Amendment thereby rendering both of the above rejections moot.

* * *

Claims 3-7 are rejected under 35 U.S.C. § 103(a) as purportedly obvious based on Ozawa in view of Yamada and Suzuki, and further in view of Iguchi et al. (U.S. Pat. No. 5,999,782). Applicants respectfully traverse.

Claim 3 (from which claims 4-7 depend) describes an image formation method of the type that includes applying a DC voltage to the developer roller with an AC voltage superimposed on the DC voltage. Claim 3 requires regulating the frequency of the AC voltage in dependence upon the state (development or non-development) of the image forming assembly to which the method of claim 3 is applied. Specifically, in the non-development state, the frequency is regulated to be higher than that in the development state. As a result of Applicants' method of claim 3, only sufficiently charged toner of a two-component developer will be moved to the developer roller, while carrier particles are maintained stationary. See pages 12 to 13 of the present specification. The results of

Applicants' invention and the advantages obtained therefrom are shown in Tables 3 and 4 of their specification.

The features of the claimed invention described above are not disclosed in the cited art. This is conceded in the Office Action with respect to Ozawa, Yamada, and Suzuki. The Office Action cites Iguchi for teaching the above described AC frequency regulation manner of the present invention. Applicants respectfully disagree for at least the following reasons.

Iguchi simply does not teach or suggest regulating applied AC voltage to be higher or lower based upon whether a controlled image forming apparatus is in a development state or a non-development state. To aid in comparing Iguchi and the claimed invention, Applicants attach hereto a timing chart showing the methods taught by Iguchi, and Applicants' claimed method. First, Iguchi (at col. 1, lines 60-67) discloses two distinct time periods t1 (action period) and t2 (rest period). This is illustrated at the top of the attached timing chart "Exhibit." Iguchi's "action" and "rest" periods simply alternate without regard to development or non-development states. Iguchi does not suggest regulating AC frequency in a non-development state to be higher than that in a development state. In a second teaching, which corresponds to Table 2 (at col. 6), Iguchi discloses a higher AC frequency during a first time period T1 than during a second time period T2. However, again periods T1 and T2 simply are repeated regardless of whether in a development state or a non-development state. Iguchi is satisfied with the result and states that "good images having excellent texture with few density irregularities were obtained." As such, Iguchi provides no teaching or manner of motivation to those of ordinary skill in the art to change from Iguchi's teachings and regulate AC frequency in a non-development state to be higher than in a development state.

Applicants also provide more technical comments in furtherance of their position. According to Applicants, Iguchi teaches that during the first period T1, a frequency of 3 kHz is applied in a single cycle. However, a single cycle at 3 kHz is only three-

thousandths of a second. This is an extremely short period for applying a voltage in the art of image forming. Next, considering that Iguchi describes the second period T2 as "the same period as the first action period T1" in col-4, lines 49 and 53, voltage again is applied only for three-thousandths of a second during the second period T2. Now consider that even if printing speed is 30 sheets/minute in an image forming machine, two seconds are required to print a sheet. This is far longer than Iguchi's periods T1 and T2. Therefore, Applicants submit it would be inconceivable for Iguchi to change AC frequency and state (non-development and development) as recited in their present claim 3. Rather, Applicants believe some third time period would be necessary in Iguchi's arrangement when the frequency is changed in a non-development state. However, of course, Iguchi discloses no such third period.

In view of the above remarks, Applicants submit that this rejection is overcome and request it be withdrawn.

* * * * *

Applicants respectfully submit that this Amendment and the above remarks obviate the outstanding rejections in this case, thereby placing the application in condition for immediate allowance. Allowance of this application is earnestly solicited.

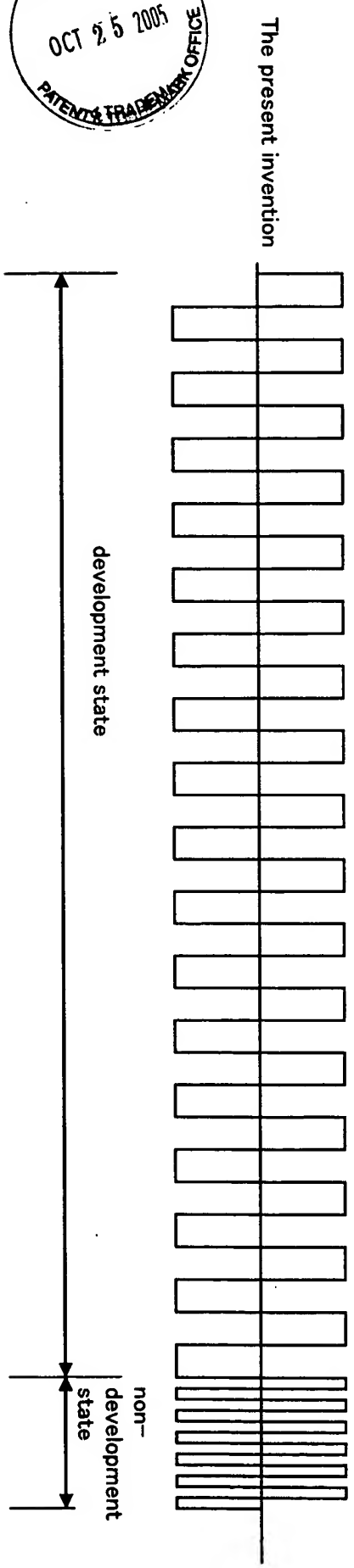
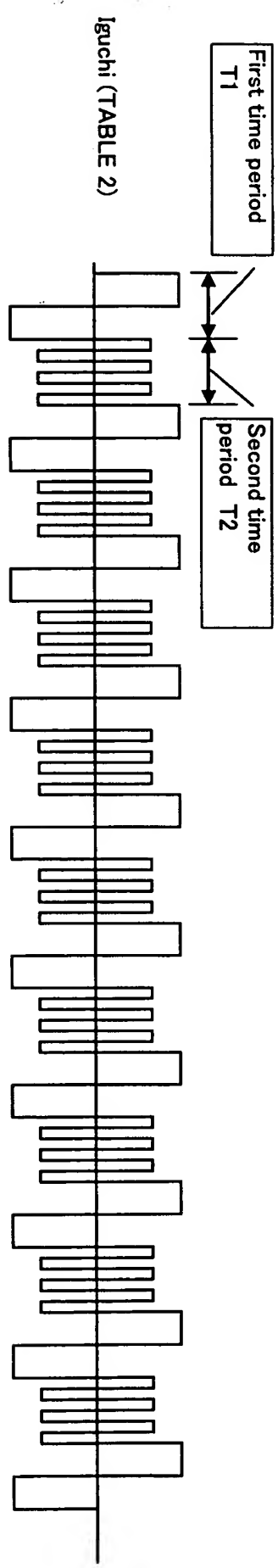
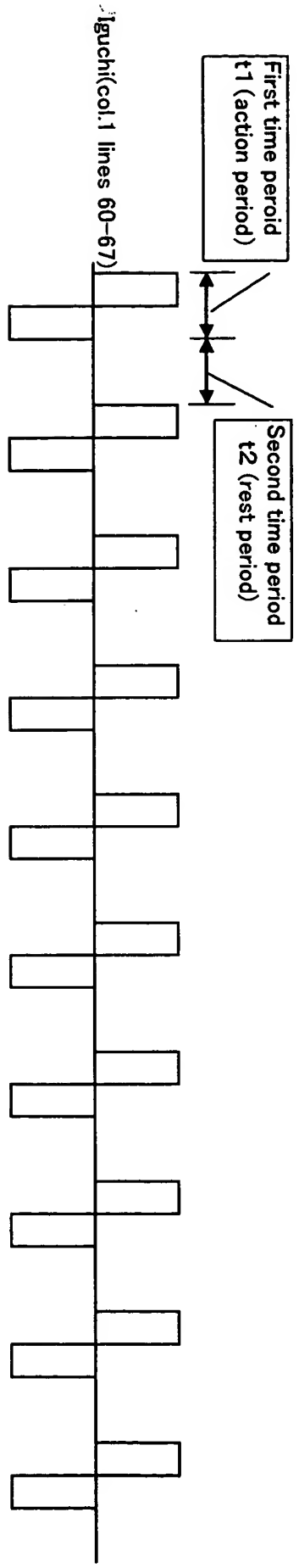
If any fees are due in connection with the filing of this Amendment, such as fees under 37 C.F.R. §§1.16 or 1.17, please charge the fees to Deposit Account 02-4300; Order No. 032739.098.

Respectfully submitted,
SMITH, GAMBRELL & RUSSELL, LLP

By: 

Michael A. Makuch, Reg. No. 32,263
1850 M Street, N.W., Suite 800
Washington, D.C. 20036
Telephone: (202) 263-4300
Facsimile: (202) 263-4329

Dated: October 25, 2005



Exhibit